REMARKS/ARGUMENTS

The claims have been amended by rewriting Claims 83 and 87, canceling Claim 92 and withdrawing Claims 95-98. Claims 1-91 and 93-94 remain in the application.

Reconsideration of this application is respectfully requested.

The Examiner has objected to Claim 83 due to a typographical error. Applicants have accordingly amended Claim 83 to correct the typographical error by replacing the language "even of" with the language "event of." Applicants therefore respectfully request that the examiner remove the objection to Claim 83.

The Examiner has rejected Claims 1-6, 8, 10-12, 14-19, 21-27, 29, 31, 32, 34-39 and 41 under 35 USC 102(e) as being anticipated by "Terrestrial Trunked Radio (TETRA) Voice Plus Data (V+D) Part 7: Security" (EN 300 392-7 V2.0.19, 2000-11). Applicants traverse these rejections. The TETRA reference cited by the Examiner does not anticipate independent Claims 1, 16, 23 and 36 and respective dependent Claims 2-6, 10-12, 14-15, 17-19, 21-22, 24-27, 29, 31, 32, 34-35, 37-39 and 41 because the reference fails to teach or suggest each limitation recited in independent Claims 1, 16, 23 and 36 and included by dependency in respective dependent Claims 2-6, 10-12, 14-15, 17-19, 21-22, 24-27, 29, 31, 32, 34-35, 37-39 and 41.

More specifically with respect to independent Claims 1 and 23 and dependent Claims 2-6, 10-12, 14-15, 24-27, 29, 31-32, and 34-35 the TETRA reference fails to teach or suggest the element cited in Claims 1 and 23 and included by dependency in Claims 2-6, 10-12, 14-15, 24-27, 29, 31-32, and 34-35 of "*forwarding the derived cipher key to the base station.*" The Examiner cites Figure 1 and Section 4.1.2 of the TETRA reference as teaching the limitation. Applicants respectfully disagree. Applicants submit that Figure 1 does not teach forwarding the derived cipher key (DCK1). Instead the derived cipher key is generated in the authentication center using an algorithm TA12 and separately in the MS using the algorithm TA12. DCK1 is not taught to be forwarded from either the authentication center or the MS to any other entity.

For all of the above reasons Applicants submit that the TETRA reference fails to teach or suggest all of the limitations of Claims 1 and 23. Therefore, Claims 1 and 23 are in a condition for allowance, and Claims 2-6, 10-12 and 14-15 that depend from Claim 1 and Claims 24-27, 29, 31-32 and 34-35 that depend from Claim 23 are likewise in a condition for allowance for all of the same reasons as Claims 1 and 23.

With respect to independent Claims 16 and 36 and dependent Claims 17-19, 21-22, 37-39 and 41, the TETRA reference fails to teach or suggest the element recited in Claims 16 and 36 and included by dependency in Claims 17-19, 21-22, 37-39 and 41 of "*receiving a derived cipher key from the authentication agent.*" The Examiner has cited Figure 1, Section 4.1.1, lines 8-10 and Section 4.1.2 as teaching this limitation, noting that the base station carries out the authentication protocols on behalf of the authentication center. Applicants disagree with the Examiner. Applicants submit that whether the authentication center or a base station on behalf of the authentication center performs the authentication protocols, the derived cipher key (DCK1) is not received from the authentication agent. In the first instance, where the authentication center performs the protocol, Figure 1 illustrates that the DCK1 remains in the authentication agent and is not "received. . . from the authentication agent [center]" in any other device. Likewise, if a base station performs the authentication protocol on behalf of the authentication protocol, the DCK1 would not be "received . . . from the authentication agent" but would remain in the base station as taught in Figure 1.

For all of the above reasons Applicants submit that the TETRA reference fails to teach or suggest all of the limitations of Claims 16 and 36. Therefore, Claims 16 and 36 are in a condition for allowance, and Claims 17-19 and 21-22 that depend from Claim 16 and Claims 37-39 and 41 that depend from Claim 36 are likewise in a condition for allowance for all of the same reasons as Claims 16 and 36.

The Examiner has rejected Claims 42, 68-69, 71-82 and 87-94 under 35 USC 102(e) as being anticipated by USPN 6,134,431 (Matsumoto). Applicants traverse these rejections. The Matsumoto reference cited by the Examiner does not anticipate independent Claims 42 and 68 and respective dependent Claims 69 and 71-82 because the reference fails to teach or suggest each limitation recited in independent Claims 42 and 68 and included by dependency in respective dependent Claims 69 and 71-82. Further, Applicants have amended Claim 87, and Matsumoto fails to teach all of the limitations recited in amended Claim 87 and included by dependency in Claims 88-91 and 93-94. Applicants have cancelled Claim 92.

More specifically, with respect to Claim 42 Matsumoto fails to teach or suggest the limitations recited in Claim 42 of "*a first key for encrypting at least one of key material and a part of the first zone session authentication information for transport in real-time to another system device in the first zone*" and "*a second key for encrypting at least a segment of the first*

zone session authentication information for transport to a system device in a zone other than the first zone." The Examiner cites col. 5, lines 47-55, col. 6, lines 9-13 and col. 24, lines 25-28 as teaching the first above-cited limitation of Claim 42 and col. 24, lines 47-65 as teaching the second above-cited limitation of Claim 42. Applicants disagree.

The Examiner's citations to Matsumoto teach: a public key for encryption of a random number, which enciphered random number is transmitted to a personal station for authentication of the personal station (col. 5, lines 47-55; col. 24, lines 25-28); a peculiar key that is enciphered and transmitted to a personal station for authentication of the personal station (col. 6, lines 9-13; col. 24, lines 25-28); and a personal station stores a peculiar key (col. 24, lines 47-65). Applicants submit the neither the public key nor the peculiar key is a "first key" or a "second key" as recited in Claim 42. The public key is used to encrypt a random number, which is neither key material nor zone session authentication information as recited in Claim 42. Moreover, the encrypted random number is transmitted to a personal station and not another system device in the first zone as recited in Claim 42. In addition, the peculiar key is defined in Matsumoto as being assigned to a personal station and is used in the authentication of the personal station (col. 10, lines 13-25). It is not, therefore, used to encrypt at least a segment of first zone session authentication information as recited in Claim 42. Also, the peculiar key is stored in the personal station and not a system device as recited in Claim 42.

For all of the above reasons Applicants submit that the Matsumoto reference fails to teach or suggest all of the limitations of Claim 42. Therefore, Claim 42 is in a condition for allowance.

With respect to Claim 68, Applicants submit that Matsumoto fails to teach or suggest the limitations recited in Claim 68 and included by dependency in Claims 69 and 71-82 of "*encrypting the session authentication information.*" The Examiner cites col. 12, lines 44-46, figure 1, element 111 and figure 9 as teaching this limitation. Applicants disagree.

The Examiner's citation to Matsumoto teaches an enciphered random number, which is not enciphered session authentication information as recited in Claim 68 (*see* the present specification at page 6, line 25 giving examples of session authentication information including a random seed (RS) and associated session authentication keys (KS and KS')). The present specification does not explicitly or implicitly indicate that a random number is session authentication information.

For all of the above reasons Applicants submit that the Matsumoto reference fails to teach or suggest all of the limitations of Claim 68. Therefore, Claim 68 is in a condition for allowance, and Claims 69 and 71-82 are likewise in a condition for allowance for all of the same reasons as Claims 68.

With respect to Claim 87, Applicants have cancelled Claim 92 and have amended Claim 87 to include the limitation from Claim 92 of "*wherein at least one of the plurality of first-level system devices is arranged and constructed to encrypt the session authentication information using an interkey.*" Applicants believe that Matsumoto does not anticipate amended Claim 87 and by dependency Claims 88-91 and 93-94 because it fails to teach or suggest this limitation. The Examiner cites col. 24, lines 60-65 as teaching this limitation. Applicants disagree. The Examiner's citation to Matsumoto teaches a personal station storing a peculiar key. This peculiar key is not the interkey as recited in amended Claim 87. The peculiar key, as argued above, is used to authenticate a personal station. Whereas, as interkey is a type of key encryption key that is used to encrypt key material sent between pools or zones (*see, e.g.*, the present specification at page 9, lines 27-30).

For all of the above reasons Applicants submit that the Matsumoto reference fails to teach or suggest all of the limitations of amended Claim 87. Therefore, Claim 87 is in a condition for allowance, and Claims 88-91 and 93-94 are likewise in a condition for allowance for all of the same reasons as amended Claim 87.

The Examiner has rejected Claims 83 and 84 under 35 USC 103(a) as being unpatentable over USPN 6,128,389 (Chan), in view of USPN 6,707,915 B1 (Jobst). Applicants traverse these rejections. Applicants submit that the combined teachings of Chan and Jobst fail to teach or suggest all of the limitations recited in Claim 83 and included by dependency in Claim 84.

More specifically, Applicants submit that neither Chan nor Jobst teaches or suggests the limitation cited in Claim 83 and included by dependency in Claim 84 of "*wherein the home location register is arranged and constructed to continue to provided authentication and support secure communications in the event of a fault at any of the key management facility, user configuration server, and the zone manager.*" The Examiner conceded that Chan fails to teach this limitation, but argues that Jobst teaches this limitation at col. 2, lines 28-33. Applicants disagree. Applicants submit that the Examiner's citation to Jobst instead teaches an IMEI code for a mobile phone (which is not a home location register as recited in Claim 83) that is used

only to identify the phone in various scenarios and not to continue to provide authentication and support secure communications in the event of a fault in various devices in the system as recited in Claim 83.

For all of the above reasons Applicants submit that the Chan and Jobst references fail to teach or suggest all of the limitations of Claim 83. Therefore, Claim 83 is in a condition for allowance, and Claim 84 is likewise in a condition for allowance for all of the same reasons as Claim 83.

The Examiner has rejected Claims 7, 9, 13, 20, 28, 30, 33 and 40 under 35 USC 103(a) as being unpatentable over "Terrestrial Trunked Radio (TETRA) Voice Plus Data (V+D) Part 7: Security" (EN 300 392-7 V2.0.19, 2000-11). Applicants traverse these rejections. As argued above, the TETRA reference fails to teach all of the limitations of independent Claims 1, 16, 23 and 36 and that these claims are therefore in a condition for allowance. Accordingly, Claims 7, 9 and 13, which depend from and include all of the limitations of Claim 1, are allowable for all of the reasons above associated with Claim 1. Claim 20, which depends from and include all of the limitations of Claim 16 is allowable for all of the reasons above associated with Claim 16, Claims 28, 30 and 33, which depend from and include all of the limitations of Claim 23, are allowable for all of the reasons above associated with Claim 23, and Claim 40, which depends from and include all of the limitations of Claim 36 is allowable for all of the reasons above associated with Claim 36.

The Examiner has rejected Claims 42-65 and 67 under 35 USC 103(a) as being unpatentable over "Terrestrial Trunked Radio (TETRA) Voice Plus Data (V+D) Part 7: Security" (EN 300 392-7 V2.0.19, 2000-11), in view of Matsumoto. Applicants traverse these rejections. Applicants submit that the combined teachings of the TETRA and Matsumoto references fail to teach or suggest all of the limitations recited in Claim 42 and included by dependency in Claims 43-65 and 67 of "*a first key for encrypting at least one of key material and a part of the first zone session authentication information for transport in real-time to another system device in the first zone*" and "*a second key for encrypting at least a segment of the first zone session authentication information for transport to a system device in a zone other than the first zone.*" The Examiner cites to Section 4.2.6, lines 6-10, Section 4.2.3, line 6 and Section 6.5.1.3 as teaching these limitations. Applicants disagree. Applicants submit that this language merely teaches a CCK, which is used to encrypt traffic such as voice, etc., and is not used to encrypt key material or

session authentication information like the first and second keys recited in Claim 42. Matsumoto also fails to teach these limitations.

For all of the above reasons Applicants submit that the TETRA and Matsumoto references fail to teach or suggest all of the limitations of Claim 42. Therefore, Claim 42 is in a condition for allowance, and Claims 43-65 and 67 are likewise in a condition for allowance for all of the same reasons as Claim 42.

The Examiner has rejected Claim 70 under 35 USC 103(a) as being unpatentable over Matsumoto, and in view of USPN 5,164,988 (Matyas). Applicants traverse this rejection. Applicants submit the based on its above arguments with respect to Claim 68, Matsumoto fails to teach or suggest the limitation recited in Claim 68 and included by dependency in Claim 70 of "*encrypting the session authentication information.*" Matyas also fails to teach this limitation. Therefore, Applicants believe that Claim 70 is in a condition for allowance.

The Examiner has rejected Claim 66 under 35 USC 103(a) as being unpatentable over "Terrestrial Trunked Radio (TETRA) Voice Plus Data (V+D) Part 7: Security" (EN 300 392-7 V2.0.19, 2000-11), in view of Matsumoto, and in view of Matyas. Applicants traverse this rejection. As argued above neither the TETRA nor Matsumoto references teach or suggest all of the claim limitations recited in Claim 42 and included by dependency in Claim 66. Matyas also fails to teach these limitations. Therefore, Applicants believe that Claim 66 is in a condition for allowance.

The Examiner has rejected Claims 85 and 86 under 35 USC 103(a) as being unpatentable over USPN 6,128,389 (Chan), in view of Jobst, and in view of "Terrestrial Trunked Radio (TETRA) Voice Plus Data (V+D) Part 7: Security" (EN 300 392-7 V2.0.19, 2000-11). Applicants traverse these rejections. As argued above, the combination of the Chan and Jobst references fails to teach or suggest all of the limitations recited in Claim 83 and included by dependency in Claim 85 and 86. The TETRA reference also fails to teach these limitations. Therefore, Applicants believe that Claims 85 and 86 are in a condition for allowance.

As the Examiner stated, in a telephone conference Applicants' attorney elected Claim 1-94 (Group 1) in response to a restriction requirement. Accordingly, Applicants withdraw Claims 95-98 drawn to Group 2 and retain the right to present claims 95-98 in a divisional application.

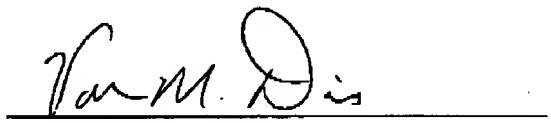
No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any

claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references. Moreover, the absence of an argument with respect to any limitation of any claim in the present application is not meant to be an admission that the limitation is taught or suggested by the references cited herein or any other reference. Therefore Applicants reserve the right to make additional arguments not included herein, including arguments regarding limitations of each of the claims not addressed herein.

The Applicants believe that the subject application, as amended, is in condition for allowance. Such action is earnestly solicited by the Applicants.

In the event that the Examiner deems the present application non-allowable, it is requested that the Examiner telephone the Applicants' attorney or agent at the number indicated below so that the prosecution of the present case may be advanced by the clarification of any continuing rejection.

Respectfully submitted,



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